

**DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
NATIONAL ADVISORY COUNCIL FOR
BIOMEDICAL IMAGING AND BIOENGINEERING
TRAINING AND CAREER DEVELOPMENT SUBCOMMITTEE**

**Summary of Meeting
May 30, 2003**

The first meeting of the Training and Career Development Subcommittee convened on May 30, 2003 at 8:45 A.M, NIH Neuroscience Center, room A1/A2. Dr. C. Douglas Maynard acted as chairperson. Subcommittee members present:

Dr. C. Douglas Maynard
Dr. Linda C. Lucas
Dr. Stephen A. Williams

Subcommittee member absent:

Dr. Shirley A. Jackson

Other NACBIB member present:

Dr. Rebecca R. Richards-Kortum

NIBIB staff present:

Dr. Peter Kirchner
Dr. Robert Nerem
Dr. Richard Swaja
Dr. Meredith Temple-O'Connor
Ms. Sandra Talley
Ms. Nancy Curling
Dr. David George
Ms. Mary Beth Kester
Ms. Dona Mazzara
Ms. Mollie Sourwine
Ms. Florence Turska

Other Attendees:

Dr. Henry Khachaturian, NINDS
Mr. Ed Nagy, Academy of Radiology Research
Mr. Francisco Sanchez-Navarro, Academy of Radiology Research

Summary of Federal Guidelines

Staff reviewed the "Guidelines for Operation of NACBIB Subcommittees." The subcommittees of the NACBIB will generally conduct business using the same operating procedures and guidelines that govern operation of the full Advisory Council. The Director, NIBIB has appointed members of NACBIB to the Subcommittee to provide advice on Training and Career Development programs. The Director, NIBIB will provide support for all Subcommittee operations. A quorum of three is required to conduct business. The Executive Secretary for the Subcommittee is Dr. Joan Harmon, who serves as liaison between the Subcommittee and the staff of NIBIB. All meetings of the Subcommittee,

including all discussions conducted through electronic means such as teleconference, must be arranged through Dr. Harmon, to ensure compliance with the Federal Advisory Committee Act. The public must have access to all meetings of the subcommittee. Notification of a meeting must be announced in the Federal Register thirty days in advance of the scheduled meeting. Dr. Harmon has responsibility for ensuring follow-up on all recommendations put forth by the Subcommittee and for preparation of meeting minutes. The Subcommittee should regularly report to the full NACBIB.

After a discussion of public participation in Subcommittee meetings, the Subcommittee decided that time would be reserved at the end of each meeting for public comments.

Purpose of the Subcommittee

The meeting began with a discussion of the purpose and mission of this NACBIB Subcommittee. It was recommended that the Subcommittee support the NIBIB in avoiding duplication of existing programs, and drawing on recommendations from previous NIBIB workshops, encourage the Institute to create innovative programs to fill in the gaps identified by these workshops. It was suggested that NIBIB contribute to training in the psychology of dissemination of innovations in healthcare. Because the technology developed by the Institute can be applied to many disease- and organ-specific areas of research and clinical care, NIBIB supported investigators must publicize the technology to physicians and focus on the psychology of acceptance. It was also noted that the T32, an NIH Institutional National Research Service Award for predoctoral and postdoctoral research training, should be modified to better serve community needs and address team science issues. The Subcommittee concluded that the group would support the NIBIB in developing relevant and effective programs that address the needs of the research community by examining existing NIBIB programs, identifying needs for new programs, and suggesting innovations that fit the mission of the NIBIB. The Subcommittee requested that Institute staff fashion a mission statement for the Subcommittee before the next meeting.

The Subcommittee should develop an understanding of the most common reasons for failure of multidisciplinary research. Many factors cause failure, including unforeseen delays, inability to plan, failure to achieve objectives, poor management, and budget issues. To assist in an analysis of these issues and the determination of solutions to multidisciplinary research failures, the Subcommittee requested that staff collect information on these issues by the next meeting, including examples from the NIH portfolio and the Julie Thompson Klein studies of multidisciplinary failures.

Meeting Logistics

Agreeing to meet in conjunction with each NACBIB meeting and to report to the full Council at each meeting, the Subcommittee discussed the options of convening the night before or on the day of Council immediately before the meeting. The Subcommittee will try the first option for the September 2003 NACBIB. These options will be discussed with members not present at this meeting as well as with NIBIB staff to ensure coordination with other NACBIB subcommittees.

An NIH staff member, observing the meeting, was invited to provide guidance on a customary term of office. He proposed that the terms could reflect the individual's term on the full advisory council; such was the case at his Institute. The Council agreed to adopt this practice.

After discussion, the Subcommittee agreed by consensus that Dr. Maynard would serve as Subcommittee Chair.

Subcommittee Discussion of NIBIB Training Programs

Staff gave a summary of the history of NIBIB training program. The Institute conducted a joint workshop with NSF in August 2001 to identify gaps in bioengineering and bioinformatics training. As a result of this workshop, the agencies developed a joint initiative to offer a ten-week summer research experience to quantitative science majors who are rising juniors, and seniors, or students in the first two years of graduate school, with the objective of attracting them to biomedical research careers. Nine grants have been awarded, and the programs will commence this summer.

In January 2002, the NIBIB joined the T32 (Institutional National Research Service Award), the F32 (Postdoctoral Individual National Research Service Award), and the K25 (Mentored Quantitative Research Career Development Award) NIH program announcements. Staff indicated that NIBIB had funded 54 training slots to date through five institutional training grants plus some fellowships (Fs) and Career awards (Ks). Since January 2003, the NIBIB has joined NIH announcements for other K and F awards. The Subcommittee requested that NIBIB staff report at each meeting on training grants awarded, number of slots filled, and areas of research being funded for new grants and grants transferred to the NIBIB.

To determine specific recommendations for training initiatives, NIBIB conducted a training workshop focused on bioengineering and biomedical imaging in August 2002. This group recommended the creation of a training subcommittee of the NACBIB. The group also suggested that the NIBIB develop a training initiative targeting medical residents to attract clinicians into research. This program is under development. It was proposed that the NIBIB create a modified, more flexible institutional training grant. NIBIB will draw upon recommendations from an upcoming BECON meeting on team science to help focus this institutional training program.

With the Whitaker Foundation going out of business in 2006, the community has looked to NIBIB to fill the Foundation's role. A meeting with the Foundation was held to identify what programs NIBIB might be able to continue. The NIH may absorb an NIH and Whitaker Foundation joint initiative funding a ten-week summer program. The NIBIB discussed support for two other Whitaker programs: a program to assist in bridging the gap from the postdoctoral level to an individual's first grant and infrastructure grants that support curriculum development.

As of May 9, 2003, the Institute has reorganized to include a Division of Inter-Disciplinary Training, as was recommended at the August 2002 workshop. Dr. Meredith Temple-O'Connor will focus on developing initiatives for this Division including the modified institutional training grant, and the medical residency and new investigator programs.

A question was raised about how applications are assigned to NIBIB. Staff briefly explained the NIH referral process led by the Center for Scientific Review (CSR) to ensure that applications are assigned to the most appropriate Institute or Center. Staff also noted that the NIBIB publicizes NIBIB training programs on the Institute web pages.

NIH does not provide infrastructure support in T32 institutional training grants. Infrastructure funding for staff or equipment is extremely important to the success of programs such as the NSF IGERT. These funds are currently limited and often require matching funds. The IGERT program does not require matching funds but strongly encourages this practice. Institutions often match funds, but most have encountered difficulties as state budgets have begun to tighten. Institutions with large endowments and other sources of support will be relatively unaffected by this change; however, this may be a major problem for institutions that are not as well endowed. It is advantageous to have a permanent person on staff to follow the institutional training grant during its lifetime. As an example, the T32 of the National Institute for General Medical Science allows funding for administrative assistance.

The Subcommittee inquired about the K02 training program and its goals and requested further clarification on how applications are assigned to the NIBIB. Staff commented briefly on the K02 program and provided more detail on the referral process.

The Subcommittee recommended that a strategic plan for training be developed. Though the Strategic Plan Development Subcommittee is working on a broad NIBIB strategic plan, the Subcommittee agreed that a smaller training strategic plan listing actions and timelines for the next three to four years would be appropriate. Staff will bring to the next Subcommittee meeting a strategic plan for training and also will ensure coordination with the NACBIB Strategic Plan Development Subcommittee.

The Subcommittee inquired about progress in the development of a medical residency program. Staff indicated that it is too early to discuss specifics, but staff will report to the Subcommittee as things progress. The Subcommittee commented that the clinical experience and cross-disciplinary training provided by a medical residency program would be very valuable. The Subcommittee also urged staff to gain input from the radiology community at an upcoming inter-agency meeting in August. In response to concerns regarding the inclusion of bioengineers and others in addition to radiologists in these proposed programs, staff stated that the intent was to construct a program that would fit all clinicians conducting research relevant to the NIBIB mission.

The Subcommittee requested an opportunity to review ideas before NIBIB finalizes initiatives. A discussion followed on how much detail should be provided so that members are not considered to be “in conflict” on any future initiatives. However, staff also emphasized that as long as the public is aware of ideas in the developmental stage, discussing concepts at public meetings is feasible.

The Subcommittee initiated a discussion on infrastructure support. This topic has been widely discussed across the NIH, and the NIBIB will be looking into this subject further.

Staff reiterated that the training program is still in its ramp-up phase. The program staff will develop a few key programs and complete them successfully rather than attempting to launch many training programs at once. During this process, NIBIB will keep the community involved and focus on information dissemination. The latter could include short courses for the community.

The discussion returned again to the importance of understanding the psychology of dissemination. The Subcommittee requested that staff supply data to answer two questions: (1) Does multidisciplinary research fail more frequently than other research and (2) What are the biggest causes of failures?

In addition to supporting training at the extramural level, NIBIB should consider developing a plan to incorporate training into the intramural program. At the next meeting, the Subcommittee requested that Dr. Peter Kirchner come to the meeting and report on training in the proposed intramural program, including the potential for funding training related to NIBIB's mission in the intramural program of other Institutes as well as progress on NIBIB's planned intramural program. The staff mentioned a postdoctoral transition program implemented at NHGRI, which funds extramural and intramural research training experiences and works to bridge postdocs into faculty positions. A number of institutes have similar intramural research training programs with bridge funding to transition postdoctorates into their own independent research programs and faculty positions. The Subcommittee emphasized that the staff should explore opportunities for rapid implementation of training opportunities within existing intramural research programs.

No responses were received to a request for public comments.

Dr. Maynard reviewed the actions that need to be taken before the next subcommittee meeting, tentatively scheduled for Wednesday, September 10, 2003 from 5:30-7:00 p.m. From the NIBIB staff, the subcommittee requested a brief strategic plan, a listing of currently funded programs including location and research areas, and an update on the proposed intramural training program. All materials will be transmitted electronically to the Subcommittee in advance of the meeting.

Additionally, the Subcommittee would like to have a report on the causes of failure in multidisciplinary research. Though NIBIB does not have a history, the staff would begin collecting this information from NIBIB grants as well as through communication with other Institutes of the NIH, by raising this issue at the NIH Training Advisory Committee. Failures in multidisciplinary research will be addressed by the upcoming BECON symposium, and elements of a good partnership will be discussed at the June meeting of investigators from NIBIB supported Bioengineering Research Partnerships. These venues should also provide input for failure analysis.

Dr. Maynard adjourned the meeting at approximately 10:00 A.M.

We certify that, to the best of our knowledge, the foregoing minutes and attachments are accurate and complete.

Joan T. Harmon, Ph.D.
Executive Secretary
National Advisory Council for Biomedical
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The Council will consider these minutes at its next meeting. Corrections or notations will be incorporated in the minutes of that meeting.